STATE OF VERMONT
PUBLIC SERVICE BOARD

Amended Petition of Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. for amendment of their Certificate of Public Good and other approvals required under 30 V.S.A. § 231(a) for authority to continue after March 21, 2012, operation of the Vermont Yankee Nuclear Power Station, including the storage of spent nuclear fuel	)))))))	Docket No. 7862

DIRECT TESTIMONY OF ROBERT STEIN
ON BEHALF OF THE
VERMONT DEPARTMENT OF PUBLIC SERVICE

October 22, 2012

Summary: Mr. Stein testifies concerning Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc.'s request to obtain a certificate of public good to operate the Vermont Yankee Nuclear Power Station (the "VY Station") for twenty years beyond its license term. His testimony will include his assessment that the electric system in Vermont and New England will remain reliable with the VY Station retired because needed transmission system changes will be in place that will maintain reliability without the unit. He further testifies that, even though there may be significant retirements of older oil and coal-fired generation sources in New England in the future, reliability for the foreseeable future will be maintained because of the current surplus of capacity in New England along with construction of new efficient resources in New England and potential purchases from Canada.

Mr. Stein sponsors the following exhibits:

Exhibit PSD-RS-1	Resume of Robert deR. Stein
Exhibit PSD-RS-2	February 17, 2011 Summary of Vermont/New Hampshire Transmission System Needs Assessment
Exhibit PSD-RS-3	ISO New England Planning Procedure No. 3
Exhibit PSD-RS-4	ISO New England Planning Procedure No. 10

Q1. Please state your name, business address, and occupation.

A1. My name is Robert Stein. I am a Principal and Co-Founder of Signal Hill Consulting Group (Signal Hill). My business address is Signal Hill Consulting Group, 110 Merchants Row, Rutland, VT 05701. My complete CV is attached as Exhibit PSD-RS-1.

Q2. Please state your educational and professional background.

A2. I have almost 40 years of experience in the New England utility industry with a focus on transmission and reliability issues and development of market rules. Since 1996 I have been an independent energy consultant, representing clients in New England who are participating in the markets established by the New England Independent System Operator ("ISO-NE") and assisting them in gaining permission to reliably interconnect new generation to the transmission system. I have experience in development and administration of market rules for energy trading in New England, negotiation of transmission interconnections, and transmission access for new market-entrants.

Q3. Please summarize your professional experience.

A3. Since 1996 I have been an independent consultant representing clients on the New England Power Pool ("NEPOOL") Participants, Reliability and Transmission Committees as well as numerous subcommittees. Additionally, I am actively involved in the NEPOOL stakeholder process, and am past chair of its Participants Committee. Throughout my career, I have been actively involved in transmission and reliability issues in New England.

From 1988 to 1996, I worked for the Central Vermont Public Service Corporation as Assistant Vice President of Energy Supply Planning, Vice President of Energy Supply Planning and Engineering, and Senior Vice President of Energy Resources and External Markets.

From 1984 to 1988, I worked as a manager for United Illuminating, an investor-owned electric utility in Connecticut, where I developed policy and testified before the Connecticut Department of Public Utility Control. From 1975 to 1984, I worked as a manager for the Massachusetts Municipal Wholesale Electric Company, a joint action agency composed of about 30 municipal light departments. From 1971 to 1975, I worked as an engineer for NEPOOL and specialized in transmission planning and bulk power system performance.

In 1996 I designed a commercial seminar entitled Electricity 101 that I have been teaching since then and have taught to more than 3,000 people from all sectors of the energy industry. My seminar focuses on the restructuring of the industry and strategies for new market-entrants.

Q4. Have you testified previously as an expert witness?

A4. I have testified as an expert witness in Connecticut, New York, Massachusetts, Vermont, and New Hampshire and before the Federal Energy Regulatory Commission ("FERC"). I testified before the Vermont Public Service Board in connection with Central Vermont Public Service rate cases and power purchase contracts several times while I worked for Central Vermont Public Service between 1988 and 1996 and was a witness for the

Department of Public Service in the federal district court (*Entergy v. Shumlin*, No. 11-CV-99 (D. Vt.)) case concerning the Vermont Yankee Nuclear Power Station (the "VY Station").

Q5. Please explain how New England maintains a reliable electric system.

A5. ISO-NE has the overall authority to operate and plan the New England electric system in compliance with standards set by the North American Electric Reliability Corporation ("NERC"), the Northeast Power Coordinating Council ("NPCC"), and ISO-NE's own planning and operating procedures. The ISO-NE planning and operating procedures are in conformance with NPCC and NERC requirements, so operating within ISO-NE standards also meets the NERC and NPCC requirements. The roots of the current system of standards date back to the 1965 Northeast blackout that demonstrated a need for greater regional control of the electric system and for national reliability standards. In 1971 New England established the New England Power Pool ("NEPOOL") and the operational authority for the dispatch of generation, and operational control of the transmission system moved from individual utilities to NEPOOL. In 1997 NEPOOL's responsibilities were shifted to the newly created ISO-NE and since its establishment ISO-NE has assumed responsibility for planning the system as well as its operation. Their authority also includes the right to order construction of transmission or installation of emergency generation to maintain system reliability.

ISO-NE maintains reliability at both a real-time and planning level. Their system operations department is responsible for the real-time operation of the system and short-

term operational studies that focus on system conditions one-to-two years in the future. ISO-NE's planning department performs long-range studies of system needs and ISO-NE procures needed capacity commitments through annual forward capacity auctions.

Q6. Please describe the history of the VY Station's participation in the New England energy market.

A6. The VY Station was originally constructed and operated by a single purpose corporation owned by a number of utilities within New England, with over 50% of the shares owned by Vermont utilities. Its rates were regulated by the FERC and thus were cost based. When the New England markets were deregulated, the VY Station was purchased by Entergy Nuclear Yankee, LLC and Entergy Nuclear Operations, Inc. (collectively "Entergy") and it operated as a merchant plant selling its output as an unregulated entity into a complex market system established by ISO-New England. Entergy also entered into long term Power Purchase Agreements with the two main Vermont utilities that expired on March 21, 2012. Since March 21, 2012, Entergy has continued to operate VY Station as a merchant plant selling its output as an unregulated entity with no contracts with Vermont utilities.

Q7. How does the VY Station as operated by Entergy currently participate in the New England electric market?

A7. The major products sold by Entergy are energy and capacity. Under the energy market rules in New England a resource is sold at the locational marginal price for energy

produced (i.e., the energy clearing price) at its delivery point, not its cost to produce energy. In addition, New England has a forward capacity market that pays new and existing resources that take on certain obligations (a Capacity Supply Obligation) under the market rules. The capacity commitment auction is made through an auction held more than three years before the year that the capacity is committed. The forward nature of the auction is designed to allow for construction of needed new resources and to allow resources to retire with enough notice that replacement resources can be found, if needed, without jeopardizing reliability.

Q8. Please describe a capacity supply obligation.

A8. Resources with a capacity supply obligation must meet certain market rule requirements including participation in the day ahead energy market. A resource without a capacity supply obligation is not obliged to participate in any of the energy markets though they may at their option. Resources without a capacity supply obligation do not receive capacity payments.

Q9. Please explain how existing generating resources such as the VY Station participate in the Forward Capacity Market.

A9. If an existing resource does not want to commit to supply capacity in a forward capacity auction it must submit a bid. If the auction clears at a price below their bid, the resource no longer has a capacity obligation in the year being auctioned unless the resource is needed for reliability. These bids are referred to as “delist bids.” A “dynamic delist bid”

is a delist bid submitted for a single year that is entered into the auction at a specific price. The auction method used in New England is referred to as a "declining clock auction" that starts at a high price and goes through a number of rounds with the clearing price declining until the desired amount of capacity is procured, or a minimum price is reached. If the auction goes below a resource's dynamic delist bid during the auction, ISO-NE performs a reliability review to determine whether the resource is needed to maintain reliability and, if it is not, it is allowed to leave the capacity market for that capacity year. If, ISO-NE determines that the resource is needed for reliability, ISO-NE rejects the delist bid during the auction and the unit remains a capacity resource unless and until ISO-NE determines that the delist bid can be accepted without impacting reliability.

Q10. How does ISO-NE determine whether a delisted bid that has been rejected can later be accepted?

A10. After a delist bid is rejected and the auction closes, ISO-NE determines what system changes are needed to allow the resource to delist. If it is determined that it is feasible for the system changes that would allow the resource to delist to be in service prior to the start of the capacity year, the delist bid is accepted. Whether such system changes can be implemented at the start of the capacity year is determined by the transmission owner or owners (the regulated utilities that own the transmission system). The responsible transmission owners must certify that the work will be completed prior to the start of the capacity year for a delist bid to be accepted. The process of certification is rigorous and

requires that an officer of the transmission owner certify that the upgrades can be in place by the date they are needed.

Q11. Please explain how the delist bid process applied to the VY Station in Forward Capacity Auction 4 ("FCA 4").

A11. Entergy submitted a dynamic delist bid for VY Station for FCA 4 for the capacity year beginning June 1, 2013. ISO-NE rejected it on the basis of its determination that the unit was needed to maintain reliability of the system. Prior to June 1, 2012, ISO-NE notified Entergy that the unit was not needed for reliability beginning June 1, 2013, and therefore they accepted the delist bid. With the acceptance of the delist bid the VY Station no longer has a capacity supply obligation for the year 2013/2014, though it may participate in the energy markets.

Q12. How did ISO-NE determine that it could maintain the reliability of the electric system in New England without the VY Station in service?

A12. FCA 4 for the 2013/2014 capacity year took place in August 2010. After it rejected Entergy's delist bid for the VY Station, ISO-NE began studies of how to maintain the reliability of the electric system without the VY Station in service. They were relatively minor, consisting of terminal equipment upgrades at a 115 kV substation in Massachusetts along with the addition of capacitor banks at a 115 kV substation and addition and relocation of shunt reactors at three 345 kV substations in Vermont. The system upgrades are considered minor because they involve work within existing

substation boundaries. The transmission owners responsible for the upgrades certified that they will be in service by June 1, 2013. The work required at the Massachusetts substation is complete and the work at the Vermont substations is scheduled to be completed during the winter of 2012-2013. The upgrades provide for better voltage control without the VY Station and increase the capability of certain 115 kV lines to a level that would not be exceeded with the VY Station out of service. As a result the delist bid that ISO-NE initially rejected for the capacity year 2013/2014 was accepted by ISO-NE just prior to June 2012, since the system can continue to operate reliably without the VY Station.

Q13. Are there any transmission upgrades that would be necessary if the VY Station remains in service but are not needed if the unit is retired?

A13. Yes, ISO-NE in a July 2011 study of the New Hampshire/Vermont area of the areas transmission needs within a 10-year horizon. The ISO-NE study identified transmission upgrades costing $23.8 million that are required if the VY Station remains in service but are not required if it is retired.

Q14. Why are there additional upgrades needed if the VY Station remains in service than if it is retired?

A14. The VY Station is a relatively large generator. When it is running and there are certain contingencies on the transmission system, two 115 kV lines become overloaded. Accordingly, these lines must be upgraded if the VY Station remains in service.

Q15. A February 2011 ISO-NE report identifies potential system reliability problems if the VY Station is not in service. Have those issues been resolved?

A15. Yes, the February 2011 report (Exhibit PSB-RS-02) identified reliability issues with the VY Station retirement. Since that report was issued, the upgrades needed to allow for reliable operation of the system without the VY Station, discussed earlier in my testimony, were identified and the transmission owners responsible for the needed work have certified that they will be in service by June 1, 2013.

Q16. Has ISO-NE rejected other VY Station delist bids?

A16. Yes they have, ISO-NE rejected a dynamic delist bid by Entergy for the capacity year 2014/2015.

Q17. Does that rejection mean that the VY Station is needed for 2014/2015 for reliability?

A17. In my opinion no. The delist bid was rejected because the auction that took place June 2011, before the system upgrades needed for the VY Station to delist received certification that they would be in place by June 1, 2013. As a result, ISO-NE rejected the dynamic delist bid, giving ISO-NE an option to maintain the unit in service for 2014/2015 or to accept the delist bid no later than June 1, 2013 if they determine that the unit is not needed for reliability.

Q18. Will ISO-NE accept the VY Station delist bid for 2014/2015?

A18. In my opinion, ISO-NE is almost certain to accept the VY Station delist bid for 2014/2015. I base that opinion on the fact that ISO-NE has now accepted the VY Station delist bids for 2013/2014 and 2015/2016 because the system upgrades that were identified as needed to allow for the acceptance of the delist bid of the VY Station for 2013/2014 are certified to be in service by June 1, 2013, and are the same upgrades that will allow the system to remain reliable in 2014/2015 without the VY Station. In my opinion ISO-NE will determine that the VY Station is not needed for 2014/2015, but ISO-NE will wait to accept the delist bid until spring 2013 to preserve its option to have the unit available in 2014/2015 for as long as they can as a hedge against a highly unlikely change in the system.

Q19. Is there a possibility that ISO-NE could reject a VY Station delist bid if one is submitted for capacity years after June 2016?

A19. It is highly unlikely and would only occur if there is a dramatic change in loads or the transmission topology. A regional capacity shortage cannot be used as the reason to reject a delist bid.

Q20. Why would a VY Station delist bid not be rejected if it is needed for to prevent a capacity shortage?

A20. The criteria for rejecting a delist bid are documented in ISO-NE Planning Procedure 10 (Exhibit PSB-RS-04). It allows a delist bid to be rejected only if ISO-NE determines that acceptance will cause unacceptable thermal, voltage, or stability reliability impacts on the

system. The Planning Procedure does not allow a delist to be rejected if there is a determination that there would be a capacity shortage if the delist bid is accepted.

Q21. Why isn't capacity shortage one of the reasons that a delist bid can be rejected?

A21. The reason that capacity shortages are not used as a reason to reject a delist bid is that retaining existing generating units because of the possibility of a capacity shortage would disrupt the forward capacity market process by delaying or preventing new generation from being developed. Since the capacity market auction takes place over three years before the capacity is needed there is no need for a market that allows for rejection of a resource solely because it is needed to prevent a capacity shortage.

Q22. Can reliability be maintained even if the over 6000 MW of legacy generation identified by ISO-NE as potentially retiring in fact does retire?

A22. Yes. First it is important to recognize that the legacy oil fired generation had a 2011 annual capacity factor of less than one percent, so they are not contributing in any significant degree to the electric energy needs of New England. The legacy generator's primary use is for local reliability or as a hedge against the possibility of gas supply disruptions or other contingencies, however, since they have long start times relying on them is a highly inefficient way to provide that service.

Q23. What would be the best way to provide local reliability or hedge against gas supply disruptions?

A23. Quick-start generation, resources that can start within 30 minutes, would provide more efficient reliability service than is currently being provided by the legacy units. If the need is local reliability the quickstart units must be located at or near the site of the existing legacy generation. For region-wide contingencies, such as the potential for loss of gas supply, the resources could be located anywhere with adequate transmission in New England.

Q24. Are you concerned that there could be a capacity shortage with the retirement of these legacy units?

A24. No. Quick-start units can be sited and put in service within the three-plus years between an auction when a legacy unit retires and the year of need.

Q25. Could the VY Station meet some of the services now being provided by the legacy units?

A25. Only to a very limited degree. For example, there may be local reliability problems in the Salem, Massachusetts area when the existing Salem coal station retires in June 2014, but since the problems are local, only resource or transmission upgrades in the Salem area can eliminate the reliability problems. The affected transmission owner is reconductoring transmission lines in the local area to preserve reliability.

Q26. Does the VY Station provide any unique reliability benefits due to its location and interconnection to the 345 kV system?

A26. All generation provides some measure of reliability benefits but that benefit is not unique in that other transmission or supply resources can provide the same benefits. Since the VY Station is interconnected to the 345 kV system, which is relatively robust, it is highly unlikely that the VY Station would provide reliability service that could not be provided by another generating plant connected to the 345 kV system.

Q27. Does the VY Station contribute to New England's ability to recover from a blackout?

A27. No. A system-wide blackout requires that ISO-NE restart the system by bringing generators online using only their on-site capability. Under normal conditions a generating resource starts by drawing power from the grid until it can produce electricity. Restarting a system if there is no generation online uses a procedure known as black start whereby small generators are started using batteries as their initial source of power and then they are used to start larger generators. ISO-NE is currently redesigning its black start program to enable ISO-NE to re-energize the electric system if there is a total loss of generation, using generating resources capable of starting without external power that then start large gas turbines on the same site connected to or near the 345 kV system. While the VY Station is interconnected to the 345 kV system, it does not have the ability the black start itself and contribute to restarting the remaining units on the system. In fact, one of the major goals of the new black start program is to restore offsite power as quickly as possible to the nuclear units in the event of a system collapse.

Q28. Are the emergency diesels at the VY Station part of the New England black start program?

A28. No. The program is designed to pair diesels that can black start to large gas turbines at the same site that can be started within a few hours. The VY Station cannot be started within a few hours.

Q29. How does ISO-NE determine whether the system meets reliability standards?

A29. The requirements are documented in Planning Procedure 3 ("PP 3"): "Reliability Standards for New England Area Bulk Power Supply System" (PSB-RS-03). Those standards are consistent with the reliability requirements of both the NERC and NPCC. There are two major areas of analysis done to ensure the reliability of a bulk power supply system - maintaining sufficient supply resources and an analysis of the reliability of the transmission system. The determination of sufficient supply is done on a probabilistic basis that determines the reserve margin needed to maintain a level of reliability of loss of load no more often than one day every 10 years. The reliability of the transmission system is done on deterministic basis using generation scenarios and combinations of equipment outages to determine whether the system meets the reliability standards. It is this deterministic analysis that is used to determine whether the VY Station is needed to maintain reliability.

Q30. Is it possible that the Vermont electric system could be more reliable without the VY Station than with it?

A30. Yes. For example, if resources are acquired from Québec via a DC interconnection to Vermont after the VY Station retires, the result could be a system-backed resource from Québec with a much lower outage rate than can be provided by an individual generator such as the VY Station. In addition the energy would be delivered over a DC interconnection near to the biggest Vermont load concentration of Chittenden County (containing about 25% of the population of Vermont) about 50 miles from the Canadian border. Deliveries from Québec would likely increase reliability to Vermont since the sources of power would be closer to the load than if obtained from the VY Station, which is about 175 miles from Chittenden County.

Q31. What are examples of alternates to continued operation of the VY Station that can provide economic benefits to the state and its residents?

A31. The 2011 Vermont Comprehensive Energy Plan gives a number of supply alternatives including a recommendation that the State work with electric utilities and increase the amount of local renewable energy in their supply portfolios. In addition, they recommend that Vermont utilities investigate securing new long-term hydropower supply potentially available from Canadian provinces.

Q32. Will an increase in natural gas use in New England be a consequence of the VY Station retiring?

A32. It is possible that retirement of the VY Station would result in increased natural gas use, a resource that is domestic and the supply of which has become increasingly available in

recent years. There are alternates, however, to continued operation of the VY Station where there will be no increase in natural gas use. New England and particularly Vermont have a long history of purchases from Québec, and increased purchases from Québec could replace the energy produced by the VY Station. Hydro-Québec has 41,000 to 42,000 MW of generation and from between 97 and 98% of the power from their system comes from hydroelectric generation. Their current generation expansion plans calls for an additional 10 TWH of hydroelectric resources by 2014. An import of 300 MW with a 50% capacity factor would only be about 1.3T WH of such resources.

Q33. Is it feasible for Vermont to purchase hydro-based resources from Québec?

A33. Yes. Vermont's northern border is with the province of Québec and there are currently two interconnections from Québec that terminate in Vermont. One is a back-to-back DC terminal in Highgate Vermont with a rating of approximately 225 MW. The import capability over Highgate is largely dedicated to energy deliveries pursuant to the new contract between Hydro-Québec and a number of Vermont utilities. There is also an AC interconnection at the Derby line substation in northeastern Vermont that serves a portion of the northern Vermont load asynchronously from New England. Modifications at the Derby line substation would be needed to increase deliveries over that interconnection.

Q34. Are there other ways to increase imports from Québec into New England?

A34. There are at least two ways that imports into Vermont from Québec could be increased. One would be to construct a new back-to-back DC terminal in northwestern Vermont. In

addition, a back-to-back DC terminal could be built at the Derby line interconnection point that would allow greater imports than can currently be made through the asynchronous interconnection of the Vermont load to Québec.

Q35. How much increased capability could these two potential projects provide?

A35. Detailed transmission studies would be required to identify the megawatt import capability that new interconnections with Québec could provide but, in my opinion, additional imports of 200–300 MW would be feasible. My conclusion is based on my understanding of the New England and more specifically Vermont transmission systems, including recent upgrades to the transmission system. These upgrades include a 345 kV line from West Rutland to New Haven, Vermont and a 115 kV line from New Haven to the Burlington area as well as a second 345 kV line from the Vernon substation at the VY Station to the Coolidge substation in Chester, Vermont. Deliveries from Québec are also made more economic because there is a significant load center in Chittenden County about 50 miles from the Québec border. Higher levels of imports from Québec could also be feasible but might require more extensive transmission upgrades south of the Chittenden County area.

Q36. Are there other possible interconnections between Québec and New England that could be used for energy imports?

A36. Yes, the existing Phase II DC line between Québec and New England has a maximum capability of 2000 MW. The line passes through northeastern Vermont and New

Hampshire and terminates in Northeast Massachusetts. While physically capable of operating at 2000 MW, the Phase II line from its initial operation was limited to firm deliveries of 1200 MW. In recent years the line has generally been limited to a maximum capability of 1400-1600 MW. The limit is in place because under certain operating conditions, loss of the line at higher imports could result in overloaded transmission lines in New York and Pennsylvania that could affect regional reliability. The overloads occur because loss of imports from Québec must be made up from sources in New York or further west. Transmission upgrades in New York or states west of New York could allow for operation of the line at higher limits and therefore result in increased imports over this existing facility.

Q37. Are there other potential import paths from Québec?

A37. A new interconnection between Québec and New England is currently under study. The 1200 MW Northern Pass Project, a DC line from Québec terminating in southern New Hampshire, would be owned by Northeast Utilities with the long-term use rights contracted by Hydro-Québec

Q38. How would losses be affected by replacing the VY Station with imports?

A38. Compared to continued operation of the VY Station losses will likely be lower if new imports are delivered over new interconnections terminating in northern Vermont. That is because the new interconnections would be electrically closer than the VY Station to the Chittenden County load center.

Q39. What would be the effect on the New England electric system's CO_2 emissions of replacing the VY Station with purchases from Québec?

A39. Under the new contract between Hydro-Québec and the Vermont utilities, Hydro-Québec is obliged to demonstrate annually that the energy delivered to Vermont is at least 90% from hydroelectric facilities. Under the reasonable assumption that the same requirement would be included in a new contract with Hydro-Québec, replacing the VY Station with new imports from Québec would result in little change in the carbon emissions.

Q40. Besides Hydro-Québec are there other possible sources of hydropower?

A40. The 2011 Vermont Comprehensive Energy Plan identifies Labrador and Newfoundland as a potential source of hydropower, in addition to Québec. That province is currently developing a new major hydro project—the lower Churchill Falls development that would add 2264 MW of hydroelectric generation by 2015.

Q41. How would replacement of the VY Station with hydropower affect New England's reliance on natural gas?

A41. Purchases of hydropower from Hydro-Québec would not significantly increase reliance on natural gas in New England.

Q42. What is the effect on reliability of increasing reliance on natural gas?

A42. In my opinion, a high reliance on natural gas is not, in and of itself, a reliability risk but rather an issue that needs to be addressed in order to maintain reliability. While a high

reliance on natural gas has its challenges, the risks can be managed and meeting the challenges is why reliance on natural gas is one of the issues that ISO-NE is addressing as part of its current strategic initiative. Several outcomes of the work now being done by ISO-NE to maintain a reliable system are increasing its communication with the interstate gas pipelines and gas burning generators and developing new models that will enable ISO-NE to better forecast the availability of natural gas during cold winter days and when there are unexpected contingencies on the interstate pipelines. The risks are not significantly increased if the VY Station were to retire.

Q43. Can the VY Station play a role in limiting the risk of increased reliance on natural gas?

A43. The risk being managed is how to minimize gas supply disruptions and, if there is a disruption, how to dispatch the system to maintain reliability. As I testified to earlier, there are replacement sources that will allow the VY Station to retire without increasing New England's use of natural gas. Since the VY Station is a baseload unit it cannot increase supply quickly in the event of a supply disruption.

Q44. Does the VY Station offer unique opportunities for purchasing energy and capacity at prices that provide for long-term affordability and price stability?

A44. The VY Station, like any power generating resource, provides an opportunity for a long-term purchase arrangement but, in my opinion a contract with the VY Station would not have any benefits that could not be obtained from other resources with predictable costs such as hydropower. That is because, in the unregulated New England markets, energy

and capacity are sold at market prices that reflect the price for electricity in an open market and are not cost based. In other words, a low-cost electricity provider will sell its energy at the same market price as another provider with higher the costs, regardless of other market factors.

An example of stable pricing is the recent long-term contract between the Vermont utilities and Hydro-Québec. The contract price is not tied to the actual cost of production from Hydro-Québec but rather escalates through the contract's life based on a formula that takes into account regional electricity prices and the movement of general price levels observed across the U.S. economy, with a damping feature that limits the change from the prior year's price. In my opinion a market-based contract with the VY Station would be on no better terms, and perhaps on worse terms, than that offered by the new contract between Hydro-Québec and Vermont.

Q45. Does this complete your testimony?

A45. Yes, at this time.